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EXAMINER

NOTE, JANIS L

ART UNIT

PAPER NUMBER

1756

DATE MAILED: 07/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/987,490	Applicant(s) KOMOTO ET AL.	
	Examiner Janis L. Dote	Art Unit 1756	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 April 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 48,49,51,54-58,61,63,64 and 67-73 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 48,49,51,54-58,61,63,64 and 67-73 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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1. The examiner acknowledges the cancellation of claims 53 and 60, and the amendments to claims 48, 54, 61, and 67, filed on Apr. 27, 2004 (Amdt042704). Claims 48, 49, 51, 54-58, 61, 63, 64, and 67-73 are pending.

The examiner notes that applicants in Amdt042704, page 7, lines 2-4, instruct the Office to cancel claims 53, 54, and 60, and to amend claims 48, 51, 53-54, 57, 61, 67, 68, 71, and 73. These instructions have been disregarded because they not in agreement with the claims presented in the listing of claims filed in Amdt042704, pages 7-13, nor with applicants' remarks in Amdt042704, page 14, lines 2-5. In applicants' remarks, applicants state that claims 48, 54, 61, and 67 have been amended and claims 53 and 60 have been cancelled. Applicants' remarks are in agreement with the claims presented in the listing of claims. Accordingly, in the interest of compact prosecution, in light of claims presented in the listing of claims and applicants' remarks at page 14, the examiner has acknowledged the cancellation and amendments of claims as set forth supra.

2. Contrary to applicants' statement regarding support for the amendment to claims 54 and 67 in Amdt042704, page 15, lines 2-4, examiner notes that support for the amendments to claims 54

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and 67 is found at page 152, lines 14-17, and page 135, lines 5-6, respectively, of the specification.

3. The objection to the specification under 35 U.S.C. 132, set forth in the office action mailed on Jan. 27, 2004 (CTNF012704), paragraph 5, has been withdrawn in response to the amended paragraph beginning at page 80, line 7, of the specification, filed in Amdt042704.

The objection to the specification set forth in CTNF012704, paragraph 6, item (1), has been withdrawn in response to the amendment to claim 48, deleting the limitation "roller member having an Asker C hardness of at most 50 deg." The Asker C hardness of the roller member is no longer a critical element. In other words, the instant claims do not require that the recited roller member have a particular Asker C hardness. The examiner notes that if the claims are amended in the future to require a roller member having "an Asker C hardness of at most 50 deg.," the objection in item (1) may be reinstated, and those claims may be rejected under 35 U.S.C. 112, first and second paragraphs.

The objection to the specification set forth in CTNF012704, paragraph 6, item (3), has been withdrawn in response to the

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amended paragraph beginning at page 80, line 7, of the specification, filed in Amdt042704.

The rejections of claims 48, 49, 51, 53-58, 60, 61, 63, 64, and 67-73 under 35 U.S.C. 112, second paragraph, set forth in CTNF012704, paragraph 11, have been withdrawn in response to the amendments to claims 48, 54, 61, and 67, and the cancellation of claim 60.

The rejection of claims 48, 49, 51, 53-58, 60, 61, 63, 64, and 67-73 under 35 U.S.C. 112, first paragraph, set forth in CTNF012704, paragraph 13, has been withdrawn in response to the amendment to claim 48, deleting the limitation "roller member having an Asker C hardness of at most 50 deg."

4. The amendment filed on Apr. 27, 2004, is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

The amended paragraph beginning at page 91, line 11, of the specification, disclosing that "the volume-average particle size of the electroconductive fine powder is 5  $\mu\text{m}$  or smaller" lacks antecedent basis in the specification. The originally filed

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specification at page 90, lines 21-24, discloses that "it is preferred that the volume-average particle size of the electroconductive fine powder is 0.8  $\mu\text{m}$  or larger." However, the originally filed specification at page 92, lines 7-9, discloses that "the volume-average particle size of the developer is 5  $\mu\text{m}$  or smaller" (emphasis added), not the electroconductive fine powder disclosed in the amended paragraph. Accordingly, there is no disclosure in the originally filed specification of the electroconductive fine powder having a volume-average particle size as disclosed in the amended paragraph.

Applicants assert that the term "developer" at page 92, line 9, was "a typographic error" and that the volume-average particle size of 5  $\mu\text{m}$  or smaller is that of the electroconductive fine powder. Applicants urge that the specification at page 90, line 25, to page 92, line 9, is concerned with the maximum size of the electroconductive fine powder. Applicants also assert that the volume-average particle sizes of examples 1-3 and 5 at page 184-187, which range from 1.3 to 3.6  $\mu\text{m}$  are in the range of 0.8 to 5  $\mu\text{m}$ .

However, applicants' assertion is mere attorney argument. Applicants have not provide any objective evidence to show that

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the term "developer" disclosed in the instant specification was indeed a typographic error. The examiner notes that the verified English-language translation of applicants' priority document Japanese patent application No. 348,146/2000, filed on Aug. 6, 2003, also discloses that the developer has a volume-average particle size of 5  $\mu\text{m}$  or less, not an electroconductive fine powder. See the translation, page 139, lines 9-11. In addition, the value of "3.6  $\mu\text{m}$ " does not provide adequate antecedent basis for the value of "5  $\mu\text{m}$ " disclosed in the amended paragraph.

Applicants are required to cancel the new matter in the reply to this Office Action.

5. The disclosure is objected to because of the following informalities:

The use of trademarks, e.g., "Coulter Counter" [sic: COULTER COUNTER] in the amended paragraph beginning at page 108, line 8, of the specification, filed in Amdt042704, and "Henschel mixer" [sic: HENSCHEL MIXER] at page 189, lines 1-2, has been noted in this application. The trademarks should be capitalized wherever they appear and be accompanied by the generic terminology. This example is not exhaustive. Applicants should review the entire specification for compliance.

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Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Appropriate correction is required.

Applicant's arguments filed in Amdt042704 have been fully considered but they are not persuasive. Applicants assert that the amendments to the specification capitalize the trademarks disclosed in the specification.

However, as noted in the objection, applicants' amendments did not capitalize all the trademarks disclosed in the specification. Accordingly, the objection stands.

6. The examiner has determined that the term "electrostatic latent-image forming means" recited in the instant claims is a means-plus-function limitation covered by the 35 U.S.C. 112, sixth paragraph.

The only definition of the electrostatic latent-image forming means is provided in Figs. 2 and 3, and at page 159, lines 9-15, of the specification, and equivalents thereof. Figs. 2 and 3 comprise "a laser light **L** from a laser light source to form an electrostatic image." See the specification,



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page 110, lines 11-12. The specification at page 159, discloses that the "exposure means [to form an electrostatic latent image] is not limited to a laser scanning exposure means . . . but can be ordinary analog imagewise exposure means or other light-emitting devices, such as LED, or a combination of light source, such as a fluorescent lamp, and a liquid crystal shutter."

7. The examiner has determined that the following terms recited in the instant claims are not covered by 35 U.S.C. 112, sixth paragraph because such "means for" are modified by sufficient structure, material, or acts for achieving the specified function. See MPEP 2181.

(1) "developing means including a toner-carrying member for transferring a magnetic toner carrier on the toner-carrying member";

(2) a charging means for charging the image-bearing member which comprises "a charging member supplied with a voltage and abutted against the image-bearing member to form a contact nip with the image-bearing member";

(3) a transfer "means for electrostatically transferring the toner image on the image-bearing member onto a transfer member via or without via an intermediate transfer member"; and

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(4) "developing means also functions as a means for recovering a portion of the magnetic toner remaining on the image-bearing member."

8. The following phrases and terms recited in the instant claims have been defined in the instant specification:

(1) The term "silicon-based" recited in instant claim 48 is defined as meaning "that the material comprises silicon as a principal element." See the specification, page 35, lines 17-18.

(2) The term "non-single crystal material" recited in instant claims 48 and 54 is defined as a material "principally in an amorphous state but can contain a minor proportion of microcrystalline or polycrystalline material." See the specification, page 35, lines 9-16.

(3) The term "% of isolated iron-containing particles" recited in instant claim 48 is defined in the specification at page 41, line 14, to page 44, line 4. The term "isolated iron-containing particles" is defined as "particles of iron or iron compound . . . isolated from magnetic toner particles." See the specification, page 41, lines 15-18. The percentages of isolated iron-containing particles recited in the instant claims are defined as  $100 \times \{(\text{number of atomic luminescence (AL) of Fe}$

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alone)/[(number of AL of Fe simultaneous with AL of C) + (number of AL of Fe alone)]}. See the specification, page 41, lines 22, to page 42, line 9. In the case of a magnetic toner particle comprising magnetic iron oxide particles, the specification at page 42, lines 10-17, discloses that the "simultaneous luminescence of carbon atom and iron atom means a luminescence from a toner particle containing magnetic iron oxide dispersed therein, and the luminescence of only iron atoms means a luminescence from an isolated iron-containing particle." In other words, the "percentage of isolated iron-containing particles" is the ratio of the number of iron-containing particles present in the magnetic toner that are not dispersed in the magnetic toner to the total number of iron-containing particles (i.e., the sum of the number of iron-containing particles dispersed in the magnetic toner particles and the number of iron-containing particles that are not dispersed in the magnetic toner).

(4) The term "average circularity" recited in instant claim 48 is defined by formula (2) at page 38, line 26. The determination of the average circularity is described in the specification at page 38, line 9, to page 40, line 19, of the specification.

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In the amendments filed on Aug. 6, 2003, and Apr. 27, 2004, applicants did not state that they disagreed with the definitions set forth supra.

9. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. Claim 48, 49, 51, 54-58, 61, 63, 64, and 67-73 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Instant claim 48 recites that the electroconductive fine powder has a volume-average particle size of 0.8 to 5  $\mu\text{m}$ . The originally filed specification does not provide an adequate written description for the particle size range recited in instant claim 48 for the reasons discussed in paragraph 4, supra, which are incorporated herein by reference.

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11. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

12. The amendment to claim 48 filed in Amdt042705 added the recitation "the electroconductive fine powder has a volume-average particles size of 0.8 to 5  $\mu\text{m}$ ." However, the verified English-language translation of the priority document, Japanese patent application No. 348,146/2000, filed on Aug. 6, 2003 (FRTRANS080603), does not provide an adequate written description of the subject matter recited in instant claim 48 as required under 35 U.S.C. 112, first paragraph. The translation at page 137, lines 22-24, discloses that "it is preferred that the volume-average particle size of the electroconductive fine powder is 0.8  $\mu\text{m}$  or larger." However, the translation at page 139, lines 9-10, discloses that "the volume-average particle size of the developer is 5  $\mu\text{m}$  or smaller" (emphasis added), not the electroconductive fine powder recited in instant claim 48. Thus, there is no disclosure in the translation of the electroconductive fine powder having a volume-average particle size as recited in instant claim 48.

Accordingly, applicants have not perfected their claim to foreign priority under 35 USC 119 regarding the subject matter

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recited in the instant claims. Thus, US 2002/0115012 A1 (Hashimoto) and European Patent 1,128,225 A2 (EP'225) are prior art. Rejections over said prior art are set forth infra.

13. Claims 48, 49, 51, 54-58, 63, 64, and 67-73 are rejected under 35 U.S.C. 102(e) as being anticipated by US 2002/0115012 A1 (Hashizume'012).

Hashizume'012 discloses an imaging apparatus comprising:

(1) An image bearing member that is within the compositional and structural limitations recited in instant claim 48 and 54. The member comprises an electroconductive support, a photoconductor layer comprising a silicon-based non-single crystal material, and a "surfacemost" layer comprising a non-single crystal carbon hydride film. Paragraphs 0034, 0035, and 0087.

(2) A charging means for charging the image-bearing member comprising a charging member supplied with a voltage and abutted against the image-bearing member to form a contact nip with the image-bearing member. Paragraphs 0142-0143. The charging means can be a magnetic brush that is within the compositional limitations recited in instant claim 48 and 67.

Paragraphs 0143, 0147, and 0149. The charging means can be rollers that are within the compositional and structural

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limitations recited in instant claim 48 and 55.

Paragraphs 0168, 0170-0173, and 0175, and Fig. 5. The charging means further comprises a DC voltage source. Fig. 5 and paragraph 0170.

(3) A laser light device as the electrostatic latent-image forming means, which is within the scope of the definition disclosed in the instant specification. Paragraph 0239 and Fig. 7, reference sign 710. See paragraph 6, supra.

(4) A developing means that comprises a toner-carrying member for transferring magnetic toner. See Figs. 4-7. Reference claim 21 recites that the developing means serves also as a cleaning means for collecting toner remaining on surface of the photosensitive member, i.e., the image-bearing member. Said developing means meets the limitations recited in instant claims 48 and 49.

(5) A transfer means that is within the structural limitations recited instant claims 48 and 73. See Fig. 7 and paragraph 0240.

Hashizume'012 does not disclose the following functional limitations: (1) the image-bearing member is charged to a particular potential as recited in instant claims 48 and 51; (2) transferring a particular magnetic toner recited in instant claim 48; and (3) the functional language recited in instant

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claims 56 and 68-72. However, the instant claims do not positively recite that apparatus comprises the particular magnetic toner, the electroconductive fine powder, the ferromagnetic metal blade, and the AC voltage source. For example, instant claim 48 merely recites "a toner-carrying member for transferring a magnetic toner" (emphasis added)," which does not distinguish the structural elements in the instantly claimed apparatus from those in Hashizume'012's apparatus. Furthermore, the recitation "image-bearing member . . . is charged to a potential of . . ." recited in instant claims 48 and 51 does not distinguish the structural elements in the instantly claimed apparatus from those in Hashizume'012's apparatus. See MPEP § 2114. "A claim containing a 'recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus' if the prior art apparatus teaches all the structural limitations of the claim." MPEP 2114 and cases cited therein. In addition, a material (i.e., the magnetic toner) worked upon by the apparatus does not limit the apparatus claims. "Inclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims." See MPEP § 2115 and cases cited therein. It is well settled, as stated in Ex parte Masham, 2 USPQ2d 1647, 1648



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(Bd. Pat. App. & Int. 1987) that "a recitation with respect to the material intended to be worked upon by a claimed apparatus does not impose any structural limitations upon the claimed apparatus which differentiates it from the prior art apparatus satisfying the structural limitations of that claimed."

Accordingly, functional language regarding the particular magnetic toner and the potential recited in instant claims instant claims 48 and 51, and the functional language recited in instant claims 56 and 68-72 do not distinguish the apparatus disclosed by Hashizume'012.

14. Claims 48, 49, 51, 55-58, 61, 63, 64, and 68-73 are rejected under 35 U.S.C. 103(a) as being unpatentable over European Patent 1,128,225 A2 (EP'225) combined with US 5,728,800 (Ohba).

EP'225 discloses an apparatus that comprises a contact charging means, an electrostatic latent-image forming means, a developing means, and a transfer means that are within the structural and compositional limitations recited in the instant claims. See EP'225, page 31, lines 28-38, page 39, lines 20-25, Figs. 1-3 and 6, and the text explaining Fig. 6 at page 52, line 37, to page 53, line 55.

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The electrostatic latent-image forming means comprises a laser 123, which meets the definition disclosed in the instant specification. See EP'225, page 31, lines 32-33; and paragraph 6, supra. The developing means 140 comprises a toner-carrying member to transfer a magnetic toner to the latent image on the image-bearing member. The developing means 140 meets the limitations recited in instant claims 48, 68, 71, and 72.

EP'225 further discloses that the developing means can also function as a cleaning device to remove magnetic toner from the image-bearing member after transfer, which meets the limitation recited in instant claim 49. EP'225, page 31, lines 28-29 and 54-56; page 37, lines 53-54; page 39, lines 1-2 and 17-19; and Fig. 1. EP'225 discloses that the contact charger may be a roller member, an electroconductive brush, or a magnetic brush. The contact charger meets the charger limitations recited in instant claims 48, 55-58, 61, 63, and 64. See EP'225, page 32, lines 10, 15-23, and 49-50; page 32, line 45, to page 33, line 12; page 33, lines 24-32 and 52-58; and page 34, lines 6-17 and 49-51.

EP'225 discloses a magnetic toner that is within the compositional limitations recited in instant claim 48. See the production of magnetic toner 2 at page 42, and in Table 2 at page 58. Magnetic toner 2 comprises magnetic toner particles

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comprising a binder resin, a surface-treated magnetic iron oxide 1 with a silane coupling agent, and 4.7 wt% of an ester wax based on the weight of the magnetic toner; and hydrophobic silica particles and conductive powder 2. The amount of 4.7 wt% is within the range of 0.1 to 20 wt% recited in instant claim 48. The amount of ester wax was determined from the information disclosed in reference example 2. The conductive powder 2 has a volume-average particle size of 3.3  $\mu\text{m}$ , which is within the range of 0.8 to 5  $\mu\text{m}$  recited in instant claim 48. See conductive fine powder 2 at reference page 41. The magnetic toner has a weight-average particle size of 7.3  $\mu\text{m}$ , an average circularity of 0.981, a modal circularity of 1.00, and 0.25% of liberated iron-containing particles. See Table 2, and page 46, lines 32-33. The weight-average particle size, average circularity, modal circularity, amount of isolated iron-containing particles, are within the respective ranges recited in instant claim 48.

EP'225 does not exemplify an image-bearing member as recited in instant claim 48. However, EP'225 discloses that the image-bearing member used in its method can be a photosensitive member comprising amorphous silicon. Page 35, line 19.

Ohba discloses an image-bearing member comprising an electroconductive cylindrical support, a photoconductive layer

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comprising amorphous silicon and a "surfacemost" layer comprising a non-single crystal material different from the photoconductive layer. The photoconductive layer has a thickness of 2 to 24  $\mu\text{m}$  "to permit a low charging potential and electric field development." Col. 5, line 60, to col. 6, line 2; and col. 16, lines 1-24. Ohba discloses that the image-bearing member does not need a heater. Col. 6, lines 42-47 and 60-63. Ohba discloses that its image-bearing member is charged to have an initial potential of 450 V or less, and that the member can be uniformly charged with a charging roller or a charging brush. Col. 5, lines 52-55; and col. 6, lines 35-41 and 56-57. Ohba discloses that the electrostatic latent images formed on its image-bearing member can be developed with a single component conductive magnetic toner. Col. 6, lines 29-34. Ohba discloses that its image-bearing member eliminates "dark attenuation increase" and reduction of photosensitivity or resolution. Col. 5, lines 15-22. Ohba discloses that its image-bearing member has high durability and provides high contrast, high quality images free from fog. Col. 5, lines 30-35 and 42-49.

It would have been obvious for a person having ordinary skill in the art to use Ohba's image-bearing member comprising amorphous silicon as the image-bearing member in the apparatus

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disclosed by EP'225, because that person would have had a reasonable expectation of successfully obtaining an image forming apparatus that provides high contrast, high quality images without fog for a long period of time.

15. Claim 54 is rejected under 35 U.S.C. 103(a) as being unpatentable over EP'225 combined with Ohba as applied to claim 48 above, further combined with European Patent 989470 A2 (EP'470).

The combined teachings of EP'225 and Ohba render obvious an apparatus as described in paragraph 14 above, which is incorporated herein by reference.

Neither EP'225 nor Ohba discloses the use of an image-bearing member comprising a "surfacemost" layer comprising a non-single crystal carbon hydride film as recited in instant claim 54. However, Ohba discloses that its surface layer can be amorphous carbon, etc. Col. 16, lines 22-24.

EP'470 discloses an electrophotographic photosensitive member comprising an electroconductive support, an amorphous silicon photoconductive layer, and a "surfacemost" layer comprising an amorphous carbon hydride film. The surfacemost layer has a volume resistivity of  $4 \times 10^{13} \Omega \cdot \text{cm}$ . EP'470, page 14, lines 43-44, and page 24, lines 15-17. EP'470

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discloses that the amorphous carbon hydride film has high hardness and high durability. The film has low friction and good water repellency. Image blurriness is prevented under high humidity even when a heater is omitted in the image forming member. Page 14, lines 44-46. EP'470 also discloses that the "movement of the charge-promotion particles [in a contact-charging foam-containing roller] or other particles toward the photosensitive member [i.e., the image-bearing member] due to the mechanical friction can be suppressed." Page 6, lines 34-36; and page 14, lines 44-46.

It would have been obvious to a person having ordinary skill in the art, in view of the teachings of EP'470, to use an amorphous carbon hydride film as the surfacemost layer in the imaging apparatus rendered obvious over the combined teachings of EP'225 and Ohba, because that person would have had a reasonable expectation of successfully obtaining an imaging apparatus that provides high contrast, high quality images without fog and blurriness for a long period of time.

16. Claims 48, 49, 51, 54-58, 63, 64, and 67-73 are rejected under 35 U.S.C. 103(a) as being anticipated by US 6,081,681 (Nagase) combined with European Patent 989470 A2 (EP'470).

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The claims are rejected for the reasons discussed in the office action mailed on Jan. 27, 2004, paragraph 18, which are incorporated herein by reference.

17. Applicants' arguments filed in Amdt042704 with respect to the rejection set forth in paragraph 16 above have been fully considered but they are not persuasive.

Applicants assert that the presently claimed invention yields superior results. Applicants assert that the "cited references fail to teach the present claimed invention nor the unexpected performance imparted thereby, and, therefore, cannot act as an anticipation."

Contrary to applicants, the instant claims were rejected under 35 USC 103(a), not 102. Applicants' arguments regarding the unexpected results due to the particular toner are not probative. As discussed in the rejection in paragraph 16, above, the instant claims do not positively recite that the apparatus recited in the instant claims comprises the particular magnetic toner recited in the instant claims. Instant claim 48 merely recites "a toner-carrying member for transferring a magnetic toner" (emphasis added). A material (i.e., the magnetic toner) worked upon by the apparatus does not limit the apparatus claims. "Inclusion of material or article worked upon

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by a structure being claimed does not impart patentability to the claims." MPEP 2115. The recitation of the intended use of the particular magnetic toner does not distinguish the structural elements of the apparatus recited in the instant claims from the structural elements of the apparatus rendered obvious over the combined teachings of Nagase and EP'470. Accordingly, the rejection stands.

The examiner has also considered applicants' arguments with respect to the rejections set forth in paragraphs 13-15 above. For the reasons discussed supra regarding the rejection over Nagase combined with EP'70, the rejections stand.

18. Claims 48, 49, 51, 54-58, 63, 64, and 67-73 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-26 of U.S. Patent No. 6,576,387 B2 (Hashizume'387).

The claims are rejected for the reasons discussed in the office action mailed on Jan. 27, 2004, paragraph 20, which are incorporated herein by reference.

Applicants' arguments filed in Amdt042704 have been fully considered but they are not persuasive.

Applicants assert that the claims of Hashizume fail to recite any of the weight average particle size, the amount of



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isolated iron-containing particles, and the wax content of the magnetic toner. Applicants further assert that the claims of Hashizume recite dynamic hardness and saturation magnetization features, which are not recited in the instant claims.

However, applicants' assertions regarding the features of the magnetic toner are not probative. As discussed in the rejection above, instant claim 48 does not positively recite that the apparatus comprises the particular magnetic toner recited in the instant claim. Rather, instant claim 48 merely recites "a toner-carrying member for transferring a magnetic toner" (emphasis added), which does not distinguish the structural elements in the instantly claimed apparatus from those recited in the claims of Hashizume'387. Moreover, the instant claims do not exclude the features recited in the reference claims of Hashizume. Thus, for the reasons discussed in the rejection, the rejection stands.

19. Claims 48, 49, 51, 55-58, 60, 61, 63, 64, and 67-73 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-57 of US 6,596,452 B2 (Magome) in view of US 6,040,103 (Ohno) and Ohba.

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Reference claims 35 and 36 recite an image forming method comprising:

(1) charging an image-bearing member by applying a voltage to a charging member that is kept in contact with an image-bearing member thereby forming a contact zone between the charging member and an image-bearing member;

(2) forming an electrostatic latent image on the charged surface of the image-bearing member;

(3) developing the latent image with a magnetic toner that is carried on a toner-carrying member, which forms a developing zone with the image-bearing member, to form a toner image; and

(4) transferring the toner image to a transfer material "via, or not via an intermediate transfer member."

The toner-carrying member meets the developing means recited in instant claim 48.

Reference claim 44, which depends from reference claim 36, requires that the charging member have a volume resistivity that meets the resistivity range recited in instant claim 48.

Reference claim 43, which depends from reference claim 36, further requires that the charging member be a roller member that has a composition that meets the composition of the roller recited in instant claim 61. Reference claim 57, which depends from reference claim 36, requires that the transfer member come

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in contact with the image-bearing member via the transfer material at the time of transfer. The transfer member meets the transfer means recited in instant claim 73. Reference claim 37, which depends from reference claim 36, requires that the developing step further serve as a cleaning step of collecting magnetic toner that remains on the image-bearing member after toner transfer, which meets the functional limitation of the developing means recited in instant claim 49. Reference claim 36 and reference claims 38-41, 46, 47, and 54-56, which depend from reference claim 36, further require steps that meet the functional language recited in instant claims 55-58, 63, 64, 68, and 70-72.

The magnetic toner recited in reference claims 35 and 36 has a weight-average particle diameter of from 3 to 10  $\mu\text{m}$ , which encompasses the range of 4 to 8  $\mu\text{m}$  recited in instant claim 48.

The magnetic toner recited in reference claims 35 and 36 meets the compositional limitations of the magnetic toner recited in instant claim 48, but for the presence of inorganic particles, electroconductive particles, and a wax as recited in instant claim 48. However, reference claims 35 and 36 recite that the magnetic toner comprises a release agent. Reference claim 35, which also recites the magnetic toner recited in reference claim 9, recites that the release agent is present in

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an amount of 1 to 30 wt% based on the weight of the toner. The amount of 1 to 30 wt% overlaps the range of 1 to 20 wt% recited in instant claim 48. Moreover, according to Ohno, it is known in the art to incorporate a wax as a release agent in a toner. Ohno, col. 2, lines 62-65. Ohno discloses that a "wax has been used to provide an improved anti-offset characteristic and an improved low-temperature fixability." Col. 3, lines 3-4. Ohno teaches the use of a particular wax having a particular maximum heat absorption peak and  $^{13}\text{C}$ -NMR spectrum. Col. 3, line 59, to col. 4, line 1. Ohno teaches that when its particular wax is used as the release agent in a toner, the toner exhibits "good low-temperature fixability even when the toner is formed in a smaller particle size and the content of the colorant (particularly a magnetic material) is increased correspondingly." Col. 3, lines 20-24. The toner also has good anti-high-temperature offset characteristic and anti-blocking property, and flowability. Col. 3, lines 25-40, The toner provides "fixed images of good image quality." Col. 3, lines 41-44.

Reference claim 35, which recites the magnetic toner recited in reference claims 14-21, requires that the magnetic toner further comprise inorganic particles that are within the compositional limitations recited in instant claim 48.

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Reference claims 35, which also recites the magnetic toner recited in reference claims 22-26, requires that the magnetic toner further comprise electroconductive particles that have a volume-average particle size of less than the weight-average particle diameter of the magnetic toner. As discussed above, the magnetic toner has a weight-average particle diameter of 3 to 10  $\mu\text{m}$ . Thus, based on the limitation recited in reference claims 22-26, the volume-average particle size of the electroconductive powder may be less than 3  $\mu\text{m}$ , which overlaps the range of 0.8 to 5  $\mu\text{m}$  recited in instant claim 48.

It would have been obvious for a person having ordinary skill in the art, in view of the subject matter claimed in Magome, to add the inorganic particles and electroconductive particles recited in reference claims 14-21 and 22-26, such that the volume-average particle size of the electroconductive particles is less than the weight-average particle size of 3  $\mu\text{m}$ , to the surface of the magnetic toner particles recited in reference claims 35 and 36, such that the resultant magnetic toner comprises inorganic particles and electroconductive fine powder that are within the limitations recited in instant claim 48. It would also have been obvious to that person, in view of the subject matter recited in the claims of Magome and

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Ohno, to use the wax disclosed by Ohno in an amount that is within the range of 1 to 20 wt% as recited in instant claim 48 in the magnetic toner rendered obvious over the subject matter recited in the claims of Magome, and to use the resulting magnetic toner in the image forming methods recited in reference claims 35 and 36. That person would have had a reasonable expectation of successfully obtaining an image forming method that provides repeatedly many magnetic toned images that have good image quality as taught by Magome.

Magome's claims 35 and 36 do not recite that their image-bearing members are image-bearing members as recited in the instant claims.

Ohba discloses an image-bearing member comprising an electroconductive cylindrical support, a photoconductive layer comprising amorphous silicon, and a "surfacemost" layer comprising a non-single crystal material different from the photoconductive layer. Ohba discloses that its image-bearing member is charged to have an initial potential of 470 V or less, which meets the functional language recited in instant claims 48 and 51. The discussion of Ohba in paragraph 14 above is incorporated herein by reference. Ohba further discloses that its charged image-bearing member can be imagewise exposed by a LED head to form a digital electrostatic latent image. Col. 24,

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lines 4-7. The LED head meets the "electrostatic latent-image forming means" recited in instant claim 48. See paragraph 7, supra.

It would have been obvious for a person having ordinary skill in the art to use Ohba's image-bearing member comprising amorphous silicon as the image-bearing member in the method rendered obvious over the subject matter recited in the claims of Magome combined with the teachings of Ohno and to charge Ohba's image-bearing member to a potential of 450 volts or less in the contact charging step recited in said method and to image-wise expose the charged image-bearing member as taught by Ohba. That person would have had a reasonable expectation of successfully obtaining an image forming method that provides digitally-obtained, high contrast, high quality images without fog for a long period of time.

The reference claims in Magome do not recite an imaging apparatus. However, as described above, the imaging method recited in Magome combined with the teachings of Ohno and Ohba recite structural elements that meet the structural elements recited in instant claims 48, 60, 61, and 73, the functional limitation of the developing means recited in instant claim 49, and the functional language recited in claims 48, 51, 55-58, 63, 64, and 68-72. Thus, it would have been obvious to a person

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having ordinary skill in the art, in view of the subject matter recited in the claims of Magome combined with the teachings of Ohno and Ohba, to make and use an imaging apparatus as recited in the instant claims. That person would have had a reasonable expectation of successfully obtaining an imaging apparatus that provides digitally-obtained, high contrast, high quality images without fog for a long period of time.

Applicants' arguments filed in Amdt042704 have been fully considered but they are not persuasive.

Applicants assert that the claims of Magome and Ohba fail to recite the instant volume average particle size and wax content recited in the instant claims. Applicants further assert that the claims of Magome recite magnetization intensity and THF insoluble matter, which are not recited in the instant claims.

However, for the reasons discussed in the rejection, the limitations recited in reference claim 35 of Magome, which recites the limitations recited in instant claims 22-26, renders obvious electroconductive fine powder having the volume-average particle recited in instant claim 48. The instant claims do not exclude the features recited in the reference claims of Magome. Furthermore, for the reasons discussed in the rejection, the use of a wax as the release agent in an amount that is within the



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amount recited in instant claim 48 is rendered obvious over the limitations recited in the claims of Magome combined with the teachings of Ohno. Thus, the reasons discussed in the rejection, the rejection stands.

20. Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (571) 272-1382. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (571) 272-1385. The central fax phone number is (703) 872-9306.

Any inquiry of papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Claudia Sullivan, whose telephone number is (571) 272-1052.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLD

Jul. 3, 2004

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